

Designing Green

GSA is working with EPA to incorporate environmental and recycling provisions for the proposed new EPA Regional Headquarters building in Kansas City, Kansas. In the requested building design, a "green rider" was incorporated into these provisions. Included in the specifications are such features as: high efficiency heating and air conditioning equipment with automated controls; energy conserving lighting (offerors are directed towards EPA's Green Lights Program); endorsement of day lighting; and low-flow plumbing fixtures among others.

Many of these items are featured in the SFO for the proposed Federal Aviation Administration building in the Kansas metropolitan area, as well. The landscape specifications for the FAA building are also consistent with the guidelines and requirements of the Executive Memorandum on Environmentally and Economically Beneficial Practices on Federal Landscape Grounds.¹³ In addition to these pilot projects, GSA has established a goal to increase their use of recycled products in public buildings.

In its strategy to implement both RCRA and the Executive Order procurement requirements in building construction, renovation, and maintenance, EPA has drafted a Green Buildings Vision and Policy Statement (Environmental Procurement Strategy, *EPAS Action Plan for Implementing Executive Order 12873 on Federal Acquisition, Recycling, and Waste Prevention*; EPA 200-R-95-001, August 1995). This statement is intended to serve as a guide for EPA as well as for other agencies and stresses a holistic, systems approach to building design, construction, renovation, and use. In their policy statement, EPA recommends such Green Building features as:

- Locations and programs to optimize use of existing infrastructure and transportation options, including the use of alternative work modes such as telecommuting and teleconferencing
- Use of recycled content and environmentally preferable construction materials and furnishings, consistent with EPA CPG
 - Energy and materials waste minimization, throughout the building's life cycle, from design through demolition or reuse
 - Building design envelope with energy efficiency in mind
 - Use of materials and design strategies to achieve optimal indoor environmental quality, particularly including light and air, to maximize health and productivity
- Operation systems and practices supporting an integrated waste management (waste prevention and recycling) system
 - Recycling building materials at demolition
 - Water management as a limited resource in site design, building construction, and building operations

The EPA has also established a number of "Green Building Demonstration Projects." Most notably is the completion of the Christopher Columbus Center in Baltimore, MD, which received an EPA grant to incorporate "green" technologies and principles. These include: green lighting systems; insulated glazing; energy-efficient heating, air conditioning, and exhaust systems; utilizing steam from a local plant fired with domestic solid waste for space heating, hot water, and laboratory sterilization.

The EPA Region 3 Environmental Science Center has been designated as another Green Building pilot project. The following green principles have been incorporated: reusing the existing structure, a housing barracks, already standing on the site; using recycled materials, such as cement containing fly ash and building insulation containing recovered materials; using materials such as glass, aluminum, and masonry with the intent of recycling them at the end of the building's service life; ensuring a well-insulated building exterior; maximizing daylight in laboratory rooms; installing high-efficiency heating and air conditioning systems with automated controls; installing green lighting; using modular designs allowing efficient space reconfigurations when functions and needs change; and landscaping designed to reduce watering and maintenance.

EPA is also attempting to establish an integrated environmental facility management program within its facilities. The requirements of the various Executive orders have typically been implemented as stand-alone programs. By approaching the management of facilities within a holistic, systems approach, the environmental and economic benefits of implementing the requirements of Executive Order 12873 and other Executive order requirements on energy and water conservation, refrigerant management, and pollution prevention programs can be more effective.

¹³These include use of native plants, practices minimizing adverse effects on natural habitat, prevent pollution, and conserve water.

Tennessee Valley Authority (TVA) In-house Facilities Services Environmental Program- an example of a Model Facility.

The Tennessee Valley Authority's (TVA) Facilities Services Environmental Program is a reflection of their commitment to preserving and enhancing the environment for future generations and providing a healthy workplace for its employees. TVA has embarked on an effort to demonstrate environmental responsibility through waster reduction, environmentally conscious building renovation, value focused environmental compliance, and energy reduction resulting in: 81.5% reduction in office waste to landfills; purchase of 8M of sustainable and recycle content materials, 5,008 cubic meters of renovation waste diverted from landfills and the reduction of energy use by 22.7%.

In Fiscal Year 1994, to ensure environmental law compliance TVA initiated a Facilities Services' Environmental Program, detailing its comprehensive Environmental Management Program. The program defines environmental regulations applicable to the various TVA facilities and activities, allowing managers to see what needs to be done, where, and when. It also (1) provides guidance to managers for compliance in the areas of clean air, clean water, hazardous materials/waste, training, and emergency response; (2) identifies individuals as points of contact in business units and workgroups to increase employee awareness; and (3) establishes a self-audit process.

For solid waste minimization, the TVA program includes centrally located collection centers for recyclable materials (paper, glass, aluminum, magazines, cardboard, and plastic), replacing work space wastebaskets with "ReBox" containers at each employee's desk, use of reusable coffee mugs at vending machines and water fountains, and using hand dryers instead of paper towels.

In the interest of energy reduction, TVA exceeded the President's goals for Government buildings and experienced a reduction in energy. Various means were used to achieve this goal, including high efficiency lamps and electronic ballasts, lighting timer control devices and programmable thermostats. An energy awareness campaign also helped by raising employee consciousness.

Sustainable or "Green" Architecture translates to designing buildings that work with the natural environment, and making use of natural, non-toxic, and low maintenance materials requiring less energy to create and operate. The TVA Sustainable Architecture team analyzed 30 building materials, allowing those managing renovations to choose appropriate materials.

Affirmative procurement efforts have also been successful. TVA, joined the National Recycling Coalition's Buy Recycled Business Alliance of 600 companies and exceeded its FY 94 and FY 95 affirmative procurement goals in recycled content and sustainable product purchases.

TVA has also supported Partners-In-Education, donating carpet, telephone books, topsoil, furniture, typewriters, calculators, light bulbs, etc. to PIE. It has made a commitment to local communities at several locations to be responsible neighbors and reduce hazardous waste generation and use non-ozone depleting refrigerants. Its environmental program puts TVA in a leadership position and is a model to emulate.

Source Separation

Source separation involves sorting recoverable materials at their point of generation by type and/or grade. The primary reason to source separate materials is to ensure their quality and homogeneity, hence their value, prior to collection and subsequent use. During separation, care must be taken to minimize or avoid contamination. Paper contamination by “prohibited” materials beyond a predetermined threshold percentage will cause the lot to be rejected. In contrast, other materials called “out throws”, although dissimilar to the grade being sorted, will cause the lot to be “downgraded” but not rejected outright. Regardless, the value of some recyclables is significantly diminished when they are mixed with other materials.

Paper

Because of the large number of paper grades used in an office environment, educating employees about source separating paper is especially important. It is important to know different grades of paper lend themselves to making different types of new products. Paper grades cited in the latest GSA recycling contracts in the Washington, DC metropolitan area (National Capital Region), for example, include Grade 1 (sorted white ledger), Grade 2 (mixed paper), Grade 3 (newspaper), Grade 4 (cardboard)¹⁴, Grade 5 (sorted office paper), and Grade 6 (telephone directories). Higher grade paper is generally worth more than lower grade paper (Grade 1) to the recycling paper mills. However, the grades most marketable in a specific area will depend on local and export markets. It is equally important to work with local paper dealers to determine what grades can be collected and sold profitably in the area where an agency is located.

When the local market or policy dictates, separate paper grades (and other material types as well) can be separated at the source. If there is a local demand for unsorted (also called “commingled”) paper, agencies may not need to source separate their recyclable paper.

However, it may still be more cost effective to do so because sorted paper commands a higher price. Conversely, if local materials dealers only accept certain grades of paper, agencies will have to source separate. When designing their office recycling program, agencies should take into consideration the local demand for the recyclables they will be collecting and determine the extent to which their program will source separate.

Another important consideration is the “cleanliness” (i.e., absence of contaminants and/or out throws) of recyclable paper. The “cleanliness” can dramatically alter the price per ton an agency receives. It is typically set as a maximum percentage for that locale (e.g., 1% of contaminants in white ledger collected in the National Capital Region). Foreign objects, such as food waste, contaminate the recycling process and create process difficulties at a paper mill, resulting in lower prices or outright paper rejection. It is essential that contaminants be kept out of recycling containers. Some agencies have instituted the concept of “wet containers” to help their employees understand and differentiate between recyclable materials and non-recyclable materials. Agencies should check with their paper dealer to determine what items are considered contaminants in their program.

Other Recyclable Materials

Because paper comprises the largest component of most Federal office waste streams, it is usually the first problem to be tackled in an office recycling program. Depending on an agency’s waste generating characteristics, however, additional materials may be included in its recycling program. Corrugated containers, as well as metal, glass, and plastic beverage containers, merit consideration for inclusion in office recycling programs, if they are present in the office waste stream in sufficient quantities to justify separate collection.

“The paper industry uses the term “corrugated” rather than cardboard. The latter term is too general a term to be used to specify paper grades.

Paper Facts'

Recycling Rates Increase: In 1994, more than 38 million tons of paper and paperboard were recovered for recycling in the U.S. This is 16 million tons more than was recovered in 1986. This averages out to 297 pounds of paper recovered for each American. Not coincidentally, the recycling rate also increased, from just over 28% in 1986, to more than 40% in 1994.

Less Paper Landfilled: About 10 million fewer tons of paper were landfilled in 1994 (37 m/tons) than in 1986 (46.2 m/tons). This is especially noteworthy since paper consumption increased during this period.

Office Paper Takes Off: Between 1990 and 1994, the recovery rate for office paper almost doubled, from 19.9% to 37.1%. More than 3 million tons

were recovered in 1994.

Recovery of Printing Writing Papers Grows: In 1994, 9.7 million tons were recovered, compared to 5 million in 1986. The recovery rate improved from 23% to 34% during that time.

Old Paper Becomes New Again: Recovered printing /writing paper was used to produce new tissue (29%) printing/writing paper (24%) paperboard (20%) and other paper products (9%). About 18% was exported.

Corrugated is King: Corrugated was recovered at the rate of 62.5% in 1994. Close to 18 million tons were recovered. The recovered material was recycled into container board (55%) and paperboard (20%). About 19% was exported.

How to Establish a Program

Federal agencies operating in GSA-owned or leased space have the opportunity to work with their building services manager to develop waste reduction and recycling programs best suiting their location and current market conditions. GSA has identified the following major steps in implementing a recycling program:

1. Marketing-Contracts to sell the recyclable material are identified and secured.
A recycling program is marketed to client agencies. Tenants are encouraged to participate, given information about program achievements, and asked for ideas on improving or publicizing the program.
2. Collection-Recyclable materials are separated, gathered, and stored for transport.
3. Procurement-Contracts to buy supplies made from recycled materials are identified and secured. Federal participants in the recycling program will be kept abreast of available recycled products through GSA's various supply publications (e.g., *GSA Supply Catalog*,

Environmental Products Guide, Federal Supply and New Item Introductory Schedules).

4. Monitoring and Evaluation-Each facet of the program is surveyed, measured, and then rated for efficiency and progress, enabling participants to see program strengths, accomplishments, and weaknesses.

Agencies should carefully watch developments in the volatile recyclables markets. Privately owned recyclables publications, such as *The Yellow Sheet* (Note: the actual title: *The Official Board Markets*) or *Recycling Times*, can provide helpful market information. To order the *Yellow Sheet*, contact Subscription Customer Service at (218) 723-9477. To order *Recycling Times*, call (800) 829-5443.

"These paper facts are from the 1995 edition of the booklet, "Recovered Paper Statistical Highlights," put together by the American Forest & Paper Association. Some of the research was conducted by Franklin Associates, Ltd. Recycling rates include both preconsumer and postconsumer materials and therefore, are higher than rates published by EPA.

Federal Recycling Program

National Capital Region

The General Services Administration (GSA) is the main property management agency for the National Capital Region (NCR). GSA coordinates the Federal Recycling Program and administers contracts for the pick up and sale of recyclable materials. All Federal agencies in the region are entitled to use the program. In GSA-owned and operated buildings, the contractor collects recyclable paper, cans, and glass from central collection containers and delivers it to a holding area. In some Regions, agencies use desktop and centralized floor containers for depositing and separating high grade paper. In the NCR, the recycling coordinator offers training sessions and measures the program's success rate.

GSA's recycling policy is building-type specific and linked to local and state law. If a building is Government-owned, local or state recycling laws govern occupants. When no local or state law exists and when in the best interest of the government (considering environmental and economic/market factors), recycling will be the rule. Similarly, for leased buildings, lessors must follow local laws for recycling. In the absence of such laws, the Government encourages the lessor to recycle, pointing to economic and environmental benefits. For those who opt to engage in such activities, GSA procures **and** administers two recycling contracts, available to any Federal agency. One is for paper and the other is for cans and glass. If you wish to join either contract, send a written request to GSA, Building Services, Washington, DC 20407.

Mr. Bill Benson of the U.S. Department of Agriculture, Beltsville Agricultural Research center in Maryland was one of the 1997 recipients of Executive Order 12856 Individual challenge awards for pollution prevention. Mr. Copper developed a "farm plan" that uses cover-crop fertilizer practices and careful determination of nutrient needs which is expected to reduce ammonium nitrate releases at the Research Center by 20 tons in 1999. His commitment to exploring new and innovative fertilizing practices represent the leadership necessary to meet the pollution prevention challenge.



Part 8 Awareness

Sec. 801.

Agency Awards Program. A government-wide award will be presented annually by the White House to the best, most innovative program implementing the objectives of this order to give greater visibility to these efforts so that they can be incorporated government-wide.

Sec. 802.

Internal Agency Awards Programs. Each agency shall develop an internal agency-wide awards program, as appropriate, to reward its most innovative environmental programs. Winners of agency-wide awards will be eligible for the White House award program.

Agency Awards Program

In 1995, the Office of the Federal Environmental Executive established the White House Closing the Circle Awards to encourage Federal agency innovation in implementing the Executive Order. These awards not only highlight the Administration's commitment to environmental excellence in government but also applaud Federal agency efforts in waste prevention, recycling, and the purchase of products containing recovered materials or other environmentally preferable attributes. They are designed to showcase model Federal programs and facilities and encourage further endeavors by Federal agencies, other public institutions, and the private sector.

Nomination forms are distributed by the Office of the Federal Environmental Executive to the Agency Environmental Executives each Fall. There are six award categories: waste prevention, recycling, affirmative procurement, environmental innovation, model facility demonstration, and Sowing the Seeds for Change. This year, for the first time, we have instituted award recognition for Federal employees excel-

lence in implementing the objectives of E.O. 1285, Federal Compliance with the Right to Know Laws and Pollution Prevention Requirements. Closing the Circle Award winners will be recognized in a public ceremony each Spring. Highlights of the 1995 and the 1996 award-winning programs have been scattered throughout this document and additional ones are included on the pages which follow. Congratulations to all responsible parties for these successes!

OFEE Web Site Launched in Spring 97

In response to many requests we have created a web site for the Office of the Federal Environmental Executive. The purpose of the Web Site is to make information about our office and about waste prevention, recycling, and affirmative procurement more accessible to the Federal community. We will update the Web Site regularly to reflect the activities of the Office of the Federal Environmental Executive and to address current issues regarding the Executive Order. Some of the topics we will include are Greening the Government: A guide to Implementing Executive Order 12873, our Closing the Circle newsletter, a calendar of upcoming events, and information concerning the White House Closing the Circle Awards. We will also include links to related sites and a comment field so that you can relay information or suggestions to our office. Our web site address is www.ofee.gov.

Award for Waste Prevention

**Facility Award Winner:
Kennedy Space Center, FL**

Over the past three years, the Kennedy Space Center (KSC) has made significant strides in reducing the amount of hazardous waste the Center generates. Effective strategic planning, developing clear waste reduction goals, and establishing environmental departments within the organization laid the groundwork for KSC's waste reduction program (Hazardous Waste Minimization at Kennedy Space Center). The program includes extensive recycling and product substitution for substances like antifreeze, solvents, and chlorofluorocarbons. The waste segregation and waste water reuse projects are also notable aspects of this program. Using 1991 as a baseline, KSC's waste reduction program efforts have reduced hazardous waste generation by 50 percent overall. Additionally, cost avoidances of \$1.3 million were realized for 1994 alone.

Award for Recycling

**Individual Award Winner
Whiteman Air Force Base, MO**

Mr. Scott Ammon, Resource Recovery and Recycling Program (RRRP) manager at Whiteman AFB, has institutionalized a comprehensive resource recovery and recycling program, underscored by strong community involvement. His aggressive outreach and educational program extends beyond the base population to reach the surrounding community and other Air Force organizations. Mr. Ammon has played an active role in developing Air Force pollution prevention policy and education to encourage waste reduction behavior. In the past two years, Mr. Ammon has delivered a stellar performance by diverting more than 7 million pounds of waste products to recycling programs and has generated more than \$115,000 in revenue.

Award for Affirmative Procurement

**Individual Award Winner:
Beth Law, National Naval Medical
Center, Bethesda, MO**

The National Naval Medical Center (NNMC), has a longstanding record of successful pollution prevention through aggressive source reduction, affirmative procurement, and recycling activities. For more than three years, Ms. Beth Law, Resource and Solid Waste Manager for NNMC (Closing the Loop at NNMC), has developed and advanced the waste reduction program to the extent that NNMC has received four significant pollution prevention awards. A key recycling initiative included changing and recycling more than 50,000 hospital lights. During the next two years, the project is expected to reduce electricity consumption by 9.2 million kwh per year. The recycling program also targets more than 14 tons of disposable sterile wraps and 28 tons of plastic disposable bedpans and urinals. These initiatives, together with numerous additional waste reduction projects, are expected to derive substantial cost savings, as well as minimize hospital waste. Additionally, cost avoidances of \$1.3 million were realized for 1994 alone.

Award for Environmental Innovation

Facility Award Winner: Kennedy Space Center, FL

The Army National Guard (ARNG; COL Philip Spence, point of contact) has demonstrated leadership in developing an innovative pollution prevention program tailoring environmental goals to specific ARNG facilities. The group effort deserves special recognition, because ARNG facilities typically generate pollutant quantities below the thresholds for mandatory pollution prevention measures. ARNG has targeted the use of less hazardous solvents and hot water pressure washers and reutilizes solvents recovered through distillation. It also instituted an aggressive recycling program for antifreeze, batteries, and shop towels. ARNG's overall pollution prevention program has resulted in notable annual waste reduction and taxpayer savings of approximately 32 tons and \$8,400, respectively.

Closing the Circle Award Winner

The Savannah River Site, Aiken SC, reduced their office white paper consumption by 10% during a one year period, from 1993-1994, despite a concurrent increase in staff and work loads. They used awareness campaigns, sanitary waste assessments, and on-site employee outreach programs addressing paper recycling, pollution prevention, and best office practices. Notably, SRS expanded the use of electronic commerce capabilities and procedures, eliminating more than 65% of its hardcopy manuals.

Award for Model Facility Demonstration Projects

Facility Award Winner: USPS Vehicle Maintenance Facility, Hartford, CT

In February 1993, the Hartford, CT, Vehicle Maintenance Facility (VMF) for the U.S. Postal Service implemented an environmental compliance program (Environmental Compliance Model Vehicle Maintenance Facility Project). The program focuses on evaluating and demonstrating new commercially available products and emerging technologies preventing and/or reducing the hazardous waste stream. These product assessments are supported by affirmative procurement practices for purchasing items deemed environmentally preferable. This strategy has served as the foundation for fleet conversions to compressed natural gas, deployment of nonhazardous aqueous parts cleaning systems, antifreeze recycling, and the use of high-volume low-pressure spray paint guns to reduce emissions of volatile organic compounds. These and numerous other product and process substitutions have enabled the Connecticut VMF to achieve a 70 percent reduction in hazardous waste generation between 1992 and 1994. During the same period, they realized cost savings of \$19,000.

Closing the Circle Award Winner

The Lake City Army Ammunition Plant, Independence, MO, recycled about 85% of its waste, contributing to a 57% reduction in overall waste disposal for 1994. Their waste is not the usual sort and includes scrap cartridges, propellant powder, ballistic sand, mercury, and used oil.

Closing the Circle News

For updated information about Federal Acquisition, Recycling and Waste Prevention, watch for Closing the Circle News. Published Quarterly and posted in EnviroSense and on our own Webpage, this newsletter keeps you in touch with upcoming events, late breaking news, and great information from the case study file. For your copy, call or email: Office of the Federal Environmental Executive, 202-260-1297 or mcpoland.fran@epa-mail.epa.gov. Submit articles, artwork, and announcements to this office at address above. We need YOU to keep in touch!



For further information, a list of all winners, or a copy of the 1996 White House Closing the Circle Awards nomination package, contact "little.dorothy@epamail.epa.gov"



Appendix A

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

October 20, 1993

EXECUTIVE ORDER 12873

FEDERAL ACQUISITION, RECYCLING, AND WASTE PREVENTION

WHEREAS, the Nation's interest is served when the Federal Government can make more efficient use of natural resources by maximizing recycling and preventing waste wherever possible;

WHEREAS, this Administration is determined to strengthen the role of the Federal Government as an enlightened, environmentally conscious and concerned consumer;

WHEREAS, the Federal Government should-through cost-effective waste prevention and recycling activities-work to conserve disposal capacity, and serve as a model in this regard for private and other public institutions; and

WHEREAS, the use of recycled and environmentally preferable products and services by the Federal Government can spur private sector development of new technologies and use of such products, thereby creating business and employment opportunities and enhancing regional and local economies and the national economy;

NOW, THEREFORE, I, WILLIAM J. CLINTON, by the authority vested in me as President by the Constitution and the laws of the United States of America, including the Solid Waste Disposal Act, Public Law 89-272, 79 Stat. 997, as amended by the Resource Conservation and Recovery Act ("RCRA"), Public Law 94-580, 90 Stat. 2795 as amended (42 USC. 6901-6907), and section 301 of title 3, United States Code, hereby order as follows:

PART 1 - PREAMBLE

Section 101. Consistent with the demands of efficiency and cost effectiveness, the head of each Executive agency shall incorporate waste prevention and recycling in the agency's daily operations and work to increase and expand markets for recovered materials through greater Federal Government preference and demand for such products.

Sec. 102. Consistent with policies established by Office of Federal Procurement Policy ("OFPP") Policy Letter 92-4, agencies shall comply with Executive Branch policies for the acquisition and use of environmentally preferable products and services and implement cost-effective procurement preference programs favoring the purchase of these products and services.

Sec. 103. This order creates a Federal Environmental Executive and establishes high-level Environmental Executive positions within each agency to be responsible for expediting the implementation of this order and statutes that pertain to this order.

PART 2 - DEFINITIONS

For purposes of this order:

Sec. 201. “Environmentally preferable” means products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.

Sec. 202. “Executive agency” or “agency” means an Executive agency as defined in 5 U.S.C. 105. For the purpose of this order, military departments, as defined in 5 U.S.C. 102, are covered under the auspices of the Department of Defense.

Sec. 203. “Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. “Postconsumer material” is a part of the broader category of “recovered material.”

Sec. 204. “Acquisition” means the acquiring by contract with appropriated funds for supplies or services (including construction) by and for the use of the Federal Government through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration and those technical and management functions directly related to the process of fulfilling agency needs by contract.

Sec. 205. “Recovered materials” means waste materials and by-products which have been recovered or diverted from solid waste, but such term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process (42 U.S.C. 6903 (19)).

Sec. 206. “Recyclability” means the ability of a product or material to be recovered from, or otherwise diverted from, the solid waste stream for the purpose of recycling.

Sec. 207. “Recycling”, means the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.

Sec. 208. “Waste prevention,” also known as “source reduction,” means any change in the design, manufacturing, purchase or use of materials or products (including packaging) to reduce their amount or toxicity before they become municipal solid waste. Waste prevention also refers to the reuse of products or materials.

Sec. 209. “Waste reduction” means preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products.

Sec 210: "Life Cycle Cost" means the amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs and disposal costs discounted over the life-time of the product.

Sec. 211. "Life Cycle Analysis" means the comprehensive examination of a product's environmental and economic effects throughout its lifetime including new material extraction, transportation, manufacturing, use, and disposal.

PART 3 - THE ROLE OF THE FEDERAL ENVIRONMENTAL EXECUTIVE AND AGENCY ENVIRONMENTAL EXECUTIVES

Sec. 301. Federal Environmental Executive. (a) A Federal Environmental Executive shall be designated by the President and shall be located within the Environmental Protection Agency ("EPA"). The Federal Environmental Executive shall take all actions necessary to **ensure** that the agencies comply with the requirements of this order and shall generate an **annual** report to the Office of Management and Budget ("OMB"), at the time of agency budget submissions, on the actions taken by the agencies to comply with the requirements of this order. In carrying out his or her functions, the Federal Environmental Executive shall consult with the Chairman of the Council on Environmental Quality"

(b) Staffing. A minimum of four (4) full time staff persons are to be provided by the agencies listed below to assist the Federal Environmental Executive, one of whom shall have experience in specification review and program requirements, one of whom shall have experience in procurement practices, and one of whom shall have experience in solid waste prevention and recycling. These four staff persons shall be appointed and replaced as follows:

(1) a representative from the Department of Defense shall be detailed for not less than one year and no more than two years;

(2) a representative from the General Services Administration ("GSA") shall be detailed for not less than one year and no more than two years;

(3) a representative from EPA shall be detailed for not less than **one** year and no *more* than two years; and

(4) a representative from one other agency determined by the Federal Environmental Executive shall be detailed on a rotational basis for not more than one year.

(5) Administration. Agencies are requested to make their services, personnel and facilities available to the Federal Environmental Executive to the maximum extent practicable for the **performance** of functions under this order.

(d) Committees and Work Groups. The Federal Environmental Executive shall establish committees and work groups to identify, assess, and recommend actions to be taken to fulfill the goals, responsibilities, and initiatives of the Federal Environmental Executive. As these committees and work groups are created, agencies are requested to designate appropriate personnel in the areas of procurement and acquisition, standards and specifications, electronic commerce, facilities management, waste prevention, and recycling, and others as needed to staff and work **on** the initiatives of the Executive.

¹⁶ Executive Order 12873 was amended on March 26, 1996; Federal Register Volume 61, Number 61 of March 28, 1996

(e) Duties. The Federal Environmental Executive, in consultation with the Agency Environmental Executives, shall:

(1) identify and recommend initiatives for government-wide implementation that will promote the purposes of this order, including:

(A) the development of a Federal plan for agency implementation of this order and appropriate incentives to encourage the acquisition of recycled and environmentally preferable products by the Federal Government;

(B) the development of a Federal implementation plan and guidance for instituting economically efficient Federal waste prevention, energy and water efficiency programs, and recycling programs within each agency; and

(C) the development of a plan for making maximum use of available funding assistance programs;

(2) collect and disseminate information electronically concerning methods to reduce waste, materials that can be recycled, costs and savings associated with waste prevention and recycling, and current market sources of products that are environmentally preferable or produced with recovered materials;

(3) provide guidance and assistance to the agencies in setting up and reporting on agency programs and monitoring their effectiveness; and

(4) coordinate appropriate government-wide education and training programs for agencies.

Sec. 302. Agency Environmental Executives. Within 90 days after the effective date of this order, the head of each Executive department and major procuring agency shall designate an Agency Environmental Executive from among his or her staff, who serves at a level no lower than at the Deputy Assistant Secretary level or equivalent. The Agency Environmental Executive will be responsible for:

(a) coordinating all environmental programs in the areas of procurement and acquisition, standards and specification review, facilities management, waste prevention and recycling, and logistics;

(b) participating in the interagency development of a Federal plan to:

(1) create an awareness and outreach program for the private sector to facilitate markets for environmentally preferable and recycled products and services, promote new technologies, improve awareness about Federal efforts in this area, and expedite agency efforts to procure new products identified under this order;

(2) establish incentives, provide guidance and coordinate appropriate educational programs for agency employees; and

(3) coordinate the development of standard agency reports required by this order;

(4) reviewing agency programs and acquisitions to ensure compliance with this order.

PART 4 - ACQUISITION PLANNING AND AFFIRMATIVE PROCUREMENT PROGRAMS

Sec. 401. Acquisition Planning. In developing plans, drawings, work statements, specifications, or other product descriptions, agencies shall consider the following factors: elimination of virgin material requirements; use of recovered materials; reuse of product; life cycle cost; recyclability; use of environmentally preferable products; waste prevention (including toxicity reduction or elimination); and ultimate disposal, as appropriate. These factors should be considered in acquisition planning for all procurements and in the evaluation and award of contracts, as appropriate. Program and acquisition managers should take an active role in these activities.

Sec. 402. Affirmative Procurement Programs. The head of each Executive agency shall develop and implement affirmative procurement programs in accordance with RCRA section 6002 (42 U.S.C. 6962) and this order. Agencies shall ensure that responsibilities for preparation, implementation and monitoring of affirmative procurement programs are shared between the program personnel and procurement personnel. For the purposes of all purchases made pursuant to this order, EPA, in consultation with such other Federal agencies as appropriate, shall endeavor to maximize environmental benefits, consistent with price, performance and availability considerations, and shall adjust bid solicitation guidelines as necessary in order to accomplish this goal.

(a) Agencies shall establish affirmative procurement programs for all designated EPA guideline items purchased by their agency. For newly designated items, agencies shall revise their internal programs within one year from the date EPA-designated the new items.

(b) For the currently designated EPA guideline items, which are: (i) concrete and cement containing fly ash; (ii) recycled paper products; (iii) re-refined lubricating oil; (iv) retread tires; and (v) insulation containing recovered materials; and for all future guideline items, agencies shall ensure that their affirmative procurement programs require that 100 percent of their purchases of products meet or exceed the EPA guideline standards unless written justification is provided that a product is not available competitively within a reasonable time frame, does not meet appropriate performance standards, or is only available at an unreasonable price.

(c) The Agency Environmental Executives will track agencies' purchases of designated EPA guideline items and report agencies' purchases of such guideline items to the Federal Environmental Executive. Agency Environmental Executives will be required to justify to the Federal Environmental Executive as to why the item(s) have not been purchased or submit a plan for how the agencies intend to increase their purchases of the designated item(s).

(d) Agency affirmative procurement programs, to the maximum extent practicable, shall encourage that:

(1) documents be transferred electronically,

(2) all government documents printed internally be printed double-sided, and

(3) contracts, grants, and cooperative agreements issued after the effective date of this order include provisions that require documents to be printed double-sided on recycled paper meeting or exceeding the standards established in this order or in future EPA guidelines.

Sec. 403. Procurement of Existing Guideline Items. Within 90 days after the effective date of this order, the head of each Executive agency that has not implemented an affirmative procurement program shall ensure that the affirmative procurement program has been established and is being implemented to the maximum extent practicable.

Sec. 404. Electronic Acquisition System. To reduce waste by eliminating unnecessary paper transactions in the acquisition process and to foster accurate data collection and reporting of agencies' purchases of recycled content and environmentally preferred products, the Executive Branch will implement an electronic commerce system consistent with the recommendations adopted as a result of the National Performance Review.

PART 5 - STANDARDS, SPECIFICATIONS AND DESIGNATION OF ITEMS

Sec. 501. Specifications, Product Descriptions and Standards. Where applicable, Executive agencies shall review and revise Federal and military specifications, product descriptions and standards to enhance Federal procurement of products made from recovered materials or that are environmentally preferable. When converting to a Commercial Item Description (CID), agencies shall ensure that environmental factors have been considered and that the CID meets or exceeds the environmentally preferable criteria of the government specification or product description. Agencies shall report annually on their compliance with this section to the Federal Environmental Executive for incorporation into the annual report to OMB referred to in section 301 of this order.

(a) If an inconsistency with RCRA Section 6002 or this order is identified in a specification, standard, or product description, the Federal Environmental Executive shall request that the Environmental Executive of the pertinent agency advise the Federal Environmental Executive as to why the specification cannot be revised or submit a plan for revising it within 60 days.

(b) If an agency is able to revise an inconsistent specification but cannot do so within 60 days, it is the responsibility of that agency's Environmental Executive to monitor and implement the plan for revising it.

Sec. Designation of Items that Contain Recovered Materials. In order to expedite the process of designating items that are or can be made with recovered materials, EPA shall institute a new process for designating these items in accordance with RCRA section 6002(e) as follows. (a) EPA shall issue a Comprehensive Procurement Guideline containing designated items that are or can be made with recovered materials.

(1) The proposed guideline shall be published for public comment in the Federal Register within 180 days after the effective date of this order and shall be updated annually after publication for comment to include additional items.

(2) Once items containing recovered materials have been designated by EPA through the new process established pursuant to this section and in compliance with RCRA section 6002, agencies shall modify their affirmative procurement programs to require that, to the maximum extent practicable, their purchases of products meet or exceed the EPA guideline standards unless written justification is provided that a product is not available competitively, not available within a reasonable time frame, does not meet appropriate performance standards, or is only available at an unreasonable price.

(b) Concurrent with the issuance of the Comprehensive Procurement Guideline required by section 502(a) of this order, EPA shall publish for public comment in the Federal Register Recovered

Material Advisory Notice(s) that present the range of recovered material content levels within which the designated recycled items are currently available. These levels shall be updated periodically after publication for comment to reflect changes in market conditions.

Sec. 503. Guidance for Environmentally Preferable Products. In accordance with this order, EPA shall *issue* guidance that recommends principles that Executive agencies should use in making determinations for the preference and purchase of environmentally preferable products.

(a) Proposed guidance shall be published for public comment in the Federal Register within 180 days after the effective date of this order, and may be updated after public comment, as necessary thereafter. To the extent necessary, EPA **may** issue additional guidance for public comment on how the principles can be applied to specific product categories.

(b) Once final guidance for environmentally preferable products has been issued by EPA, Executive agencies shall use these principles, to the maximum extent practicable, in identifying and purchasing environmentally preferable products and shall modify their procurement programs by reviewing and revising specifications, solicitation procedures, and policies as appropriate.

Sec. 504. Minimum Content Standard for Printing and Writing Paper. Executive agency shall ensure that agencies shall meet or exceed the following minimum materials **content** standards when purchasing or causing the purchase of printing and writing paper:

(a) For high speed copier paper, offset paper, forms bond, computer printout paper, carbon paper, file folders, white wove envelopes and for other uncoated printing and writing paper, such as writing and office paper, book paper, cotton fiber paper, and cover stock, the minimum content standard shall be no less than 20 percent postconsumer materials beginning December 31, 1994. This minimum content standard shall be increased to 30 percent beginning on December 31, 1998.

(b) As an alternative to meeting the standards in sections 504(a), for all printing and writing papers, the minimum content standard shall be no less than 50 percent recovered materials that are waste material byproduct of a finished product other than a paper or textile product which would otherwise be disposed of in a landfill, as determined by the State in which the facility is located.

(1) The decision not to procure recycled content printing and writing paper meeting the standards specified in this section shall be based solely on a determination by the contracting officer that a satisfactory level of competition does not exist, that the items are not available within a reasonable time period, or that the available items fail to meet reasonable performance standards established by the agency or are only available at an unreasonable price.

(2) Each agency should implement waste prevention techniques, as specified in section 402 of this order, so that total annual expenditures for recycled content printing and writing paper do not exceed current annual budgets for paper products as measured by average annual expenditures, adjusted for inflation based on the Consumer Price Index or other suitable indices. In determining target budget for printing and writing paper, agencies may take into account such factors as employment increases or decreases, new agency or statutory initiatives, and episodic or unique requirements (e.g., census).

"Executive Order 12873 was amended on March 25, 1996; Federal Register Volume 61, Number 61 of March 28, 1996 as E.O. 1299:

(3) Effective immediately, all agencies making solicitations for the purchase of printing and writing paper shall seek bids for paper with postconsumer material or recovered waste material as described in section 504(c).

Sec. 505. Revision of Brightness Specifications and Standards. The General Services Administration and other Federal agencies are directed to identify, evaluate and revise or eliminate any standards or specifications unrelated to performance that present barriers to the purchase of paper or paper products made by production processes that minimize emissions of harmful byproducts. This evaluation shall include a review of unnecessary brightness and stock clause provisions, such as lignin content and chemical pulp requirements. The GSA shall complete the review and revision of such specifications within six months after the effective date of this order, and shall consult closely with the Joint Committee on Printing during such process. The GSA shall also compile any information or market studies that may be necessary to accomplish the objectives of this provision.

Sec. 506. Procurement of Re-refined Lubricating Oil and Retread Tires. Within 180 days after the effective date of this order, agencies shall implement the EPA procurement guidelines for re-refined lubricating oil and retread tires.

(a) Commodity managers shall finalize revisions to specifications for re-refined oil and retread tires, and develop and issue specifications for tire retreading services, as commodity managers shall take affirmative steps to procure these items in accordance with RCRA section 6002.

(b) Once these items become available, fleet managers shall take affirmative steps to procure these items in accordance with RCRA section 6002.

Sec. 507. Product Testing. The Secretary of Commerce, through the National Institute of Standards and Technology ("NIST"), shall establish a program for testing the performance of products containing recovered materials or deemed to be environmentally preferable. NIST shall work with EPA, GSA and other public and private sector organizations that conduct appropriate life cycle analyses to gather information that will assist agencies in making selections of products and services that are environmentally preferable.

(a) NIST shall publish appropriate reports describing testing programs, their results, and recommendations for testing methods and related specifications for use by Executive agencies and other interested parties.

(b) NIST shall coordinate with other Executive and State agencies to avoid duplication with existing testing programs.

PART 6 - AGENCY GOALS AND REPORTING REQUIREMENTS

Sec. 601. Goals for Waste Reduction. Each agency shall establish a goal for solid waste prevention and a goal for recycling to be achieved by the year 1995. These goals shall be submitted to the Federal Environmental Executive within 180 days after the effective date of this order. Progress on attaining these goals shall be reported by the agencies to the Federal Environmental Executive for the annual report specified in section 301 of this order.

Sec. 602. Goal for Increasing the Procurement of Recycled and Other Environmentally Preferable Products. Agencies shall strive to increase the procurement of products that are environmentally preferable or that are made with recovered materials and set annual goals to maximize the number of recycled products purchased, relative to non-recycled alternatives.

Sec. 603. Review of Implementation. The President's Council on Integrity and Efficiency ("PCIE") will request that the Inspectors General periodically review agencies' affirmative procurement programs and reporting procedures to ensure their compliance with this order.

PART 7 - APPLICABILITY AND OTHER REQUIREMENTS

Sec. 701. Contractor Operated Facilities. Contracts that provide for contractor operation of a government-owned or leased facility, awarded after the effective date of this order, shall include provisions that obligate the contractor to comply with the requirements of this order within the scope of its operations. In addition, to the extent permitted by law and where economically feasible, existing contracts should be modified.

Sec. 702. Real Property Acquisition and Management. Within 90 days after the effective date of this order, and to the extent permitted by law and where **economically** feasible, Executive agencies shall ensure compliance with the provisions of this order in the acquisition and management of Federally owned and leased space. GSA and other Executive agencies shall also include environmental and recycling provisions in the acquisition of all leased space and in the construction of new federal buildings.

Sec. 703. Retention of Funds. Within 90 days after the effective date of this order, the Administrator of GSA shall develop a legislative proposal providing authority for Executive agencies to retain a share of the proceeds from the sale of materials recovered through recycling or waste prevention programs and specifying the eligibility requirements for the materials being recycled.

Sec. 704. Model Facility Programs. Each Executive department and major procuring agency shall establish model facility demonstration programs that include comprehensive waste prevention and recycling programs and emphasize the procurement of recycled and environmentally preferable products and services using an electronic data interchange (EDI) system.

Sec. 705. Recycling Programs. Each Executive agency that has not already done so shall initiate a program to promote cost effective waste prevention and recycling of reusable materials in all of its facilities. The recycling programs implemented pursuant to this section must be compatible with applicable State and local recycling requirements. Federal agencies shall also consider cooperative ventures with State and local **governments** to promote recycling and waste reduction in the community.

PART 8 - AWARENESS

Sec. 801. Agency Awards Program. A government-wide award will be presented annually by the White House to the best, most innovative program implementing the objectives of this order to give greater visibility to these efforts so that they can be incorporated government-wide.

Sec. 802. Internal Agency Awards Programs. Each agency shall develop an internal **agency-**wide awards program, as appropriate, to reward its most innovative environmental programs. Winners of agency-wide awards will be eligible for the White House award program.

PART 9 - REVOCATION, LIMITATION AND IMPLEMENTATION

Executive Order No. 12780, dated October 31, 1991, is hereby revoked.

Sec. 902. This order is intended only to improve the internal management of the Executive Branch and is not intended to create any right or benefit, substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any other person.

Sec. 903. The policies expressed in this order, including the requirements and elements for effective agency affirmative procurement programs, shall be implemented and incorporated in the Federal Acquisition Regulation (FAR) within 180 days after the effective date of this order. The implementation language shall consist of providing specific direction and guidance on agency programs for preference, promotion, estimation, certification, reviewing and monitoring.

Sec. 904. This order shall be effective immediately.

WILLIAM J. CLINTON
THE WHITE HOUSE,
October 20, 1993.



Appendix B

Agency Environmental Executives

Agency for International Development

Mr. Thomas E. Huggard
Director, Office of Administrative Services
M/FA/AS, Room 1600A, SA-14
320 21st Street, NW
Washington, DC 20523

Central Intelligence Agency

Mr. Richard D. Calder
Deputy Director, Administration
Washington, DC 20505

Consumer Product Safety Commission

Ms. Margaret Neily
Agency Environmental Executive
Room 704-EWT
Washington, DC 20207

Department of Agriculture

Ms. Pearlie S. Reed
Acting Assistant Secretary for Administration
Rm 240-W, Administration Building
14th and Independence Avenue, SW
Washington, DC 20250-0103

Department of Commerce

Mr. Raphael Borrás
Deputy Assistant Secretary for Administration
Room 5830
14th and Constitution Avenue NW
Washington, DC 20230

Department of Defense

Ms. Sherri W. Goodman
Deputy Under Secretary of Defense
(Environmental Security)
Room 3E792
3400 Defense Pentagon
Washington, DC 20301-3400

Department of Education

Mr. Gary Rasmussen
Director for Management
Suite 2164
600 Maryland Ave. SW
Washington, DC 20202-4500

Department of Energy

(Position Vacant)
1000 Independence Ave,
Washington, DC 20585

Department of Health and Human Services

Mr. Terrence J. Tychan
Deputy Assistant Secretary, Grants and
Acquisition
Room 517
200 Independence Ave, SW
Washington, DC 20201

Department of Housing and Urban Development

Ms. Marilyn A. Davis
Assistant Secretary for Administration
Room 10110
451 7th Street, SW
Washington, DC 20410

Department of Interior

Dr. Willie R. Taylor
Director, Office of Environmental Policy
and Compliance
Mail Stop 2340
1849 C Street, NW
Washington, DC 20240

Department of Justice

Mr. Warren Oser
Policy Advisor, Justice Management Division
Room 1111
10th & Constitution
Washington, DC 20530

Department of Labor

Ms. Cynthia A. Metzler
Assistant Secretary for
Administration and Management
Room S 2514
200 Constitution Avenue, NW
Washington, DC 20210

Department of State

Mr. Lloyd W. Pratsch

Department Procurement Executive

A/OPE, Suite 603, SA-6

Washington, DC 20520-0602

Department of Transportation

Ms. Melissa Spillenkothen

Assistant Secretary for Administration

Room 10314

4th and 7th Street SW

Washington, DC 20590

Department of Treasury

Mr. W. Scott Gould

Deputy Assistant Secretary,

Finance and Management

1500 Pennsylvania Avenue NW

Washington, DC 20220

Department of Veterans Affairs

Mr. Gary J Krump

Deputy Assistant Secretary,

Acquisition and Material Management

810 Vermont Avenue, NW

Washington, DC 20420

Environmental Protection Agency

Mr. James Aidala Jr.

Associate Assistant Administrator OPPTS

401 M St. SW

Washington, DC 20460

Federal Emergency Management Agency

Mr. Bruce Campbell

Associate Director, Operations Support

500 C Street, SW

Washington, DC 20472

General Services Administration

Mr. John Stanberry

Environmental Executive (PM)

Room 4340

18th & F Streets, NW

Washington, DC 20405

**National Aeronautics and Space
Administration**

Ms. Benita A. Cooper

Associate Administration Management Systems
& Facilities

Headquarters Code J

300 E Street, SW

Washington, DC 20546

Small Business Administration

Mr. Thomas Dumaresq

Director, Office of Administrative Services

5th Floor

409 Third Street, SW

Washington, DC 20416

Social Security Administration

Mr. John R. Dyer

6401 Social Security Blvd

Room-800 Altmeyer Building

Baltimore, MD 21235

The following organizations are not Executive Branch agencies and are therefore not subject to Executive Order 12873. However, they play critical roles in federal procurement and have therefore volunteered to participate with the spirit of the order.

Government Printing Office

Mr. William Harris

Agency Environmental Executive

C521 OHES

7321 North Capitol

Washington, DC 20401

Smithsonian Institution

Ms. Mary K. Lanigan

Environmental Protection Specialist

Office of Environmental Management and
Safety

490 L'Enfant Plaza

Suite 4202

Washington, DC 20560

Tennessee Valley Authority

Mr. John M. Loney

Manager Environmental Management

400 West Summit Hill Dr

Knoxville, Tennessee 37902-1499

US Postal Service

Mr. Charlie Bravo

Manager, Environmental Mgt. Policy

Room 6830

475 L'Enfant Plaza, SW

Washington, DC 20260-2810



Appendix C

Recycled Products Information Sources Information Resources'*

General

Recycled Products Guide

The Recycled Products Guide contains more than 5,000 recycled product listings under classifications such as paper, oil, glass, metals, packaging, and construction materials. Listings in the guide are free to those who can certify the recycled content of their product and are updated on a regular basis. The cost for a one-year subscription (the current issue plus regular update) is \$295. Alliance members receive a 50% discount. For more information call 800/267-0707.

How to Buy Recycled

The Northeast Maryland Waste Disposal Authority published a *Buy Recycled Training Manual* to teach government and private sector purchasers how to buy recycled, types of products that are available, where to find them, how to judge product quality, and the long-term benefits of buying recycled products.

The manual covers legislation and content standards, specification, product testing, purchasing options such as cooperative buying, closed loop recycling, indirect purchases, record keeping, and evaluation. It also includes an appendix of information on recycled products and standards. The cost is \$20 for private agencies and \$15 for public and nonprofit discounts for larger quantities are available. The Authority also offers full day and shorter training programs based on the manual. For information, contact Richard Keller, 410/974-7254 ext. 342.

Harris Directory of Recycled and Pollution Preventing Materials for Home, Office, and Garden, \$45 for shipping, handbook included with publication, 24 pages, 9th edition.

The Harris Directory comprises more than 2,000 recycled construction products and is available on disk in Mac and DOS for Window formats. The cost of \$69 per year includes the current disk and one update. For more information, contact B.J. Harris, 522 Acequia Madre, Santa Fe, NM 87501, 505/995-1180.

Recycled Products Directory

The Metropolitan Washington Recycled Directory is available from the Metropolitan Washington Council of Governments. This directory, sold for \$15, contains listings of more than 250 products, manufactured and distributed by 170 District of Columbia, Maryland and Virginia companies. To order, call 202/962-3256. For more information or to be listed in future editions, call John Snarr or Joan Rohlfs at 202/962-3200.

Green Pages Directories

The U.S. Environmental Protection Agency and U. S. Department of Commerce publishes a Green Pages directory of U. S. environmental products and services. For information, contact 202/337-0336.

Co-op America has a National Green Pages directory of environmental business and organizations, including companies that make recycled products. For more information, contact 202/872-5307.

**This information has been provided to the Federal Environmental Executive by the Buy Recycled Business Alliance which provides this resource as a service to its members and does not endorse or guarantee any of the following products or services.*

Canadian Recycled Products

The Green Procurement Institute published a guidebook containing listings for about 400 Canadian companies manufacturing and marketing approximately 800 recycled products. This guide is only available to CRBA members. Membership costs \$325 and includes the guidebook, newsletter, member directory, and other services. 800/945-6555 or 416/594-3461

Rotary Goes Green

The Rotary Club of Seattle has published *Going Green: A Guide to Becoming an Environmentally Friendly Business Without Going Broke*. The 40-page booklet focuses on reducing wastes, cutting down on water use, conserving energy, and buying recycled products. Sponsored by the Rotary Club in conjunction with *Understanding Guides*, the guide is geared toward Seattle-area businesses but includes a list of recycled product sources around the country. The publication also includes case studies and examples of what a business can do to help the environment and save money. For more information, call Understanding Guides at 415/616-6800.

Just for Sellers

Environmental Newsletters, Inc. publishes two newsletters useful to companies and to recycled product manufacturers. *Waste Reduction Tips* shows organizations how to purchase fewer materials and supplies, reuse what is purchased, recycle, buy recycled, and reduce waste disposal costs. Subscriptions are \$97 per year, \$57 for NRC members.

EPA Issued Procurement Guidelines

In May, the Environmental Protection Agency issued the *Comprehensive Guideline for Procurement of Products Containing Recovered Materials* (CPG) and the *Recovered Materials Advisory Notice* (RMAN), as part of its program to promote the use of recovered materials.

The Federal Register and fact sheet are available in electronic format through EPA's Public

Access Server at gopher.epa.gov. For more information, call the Hotline at 800/424-9346 or TDD 800/553-7672 (hearing impaired).

Resource on More Than 200 Purchasing Preference Laws

Raymond Communications, publisher of the newsletter *State Recycling Laws Update* has compiled a report of more than 200 state and local purchasing preference laws, useful for those selling and marketing recycled products. The report costs \$65 for SRLU subscribers, \$117 for government, and has a \$147 list price. For more information, contact Raymond Communications at 301/345-4237.

McRecycle USA Registry

McDonald's Corporation has compiled an extensive database of over 900 recycled products from over 500 manufacturers used in McDonald's restaurants such as recycled paper napkins, roofing materials, furniture, paving materials, loading dock equipment, food service equipment, carpeting, flooring, and wall covering. For more information, contact 800/220-3809.

Business Resource Directory

Ventura County Solid Waste Management Department has produced the *Business Resource Directory*, listing hundreds of business resources at the local, state, and federal levels. For a copy, contact the Ventura County Solid Waste Human Resources Department, Workforce Development Division at 805/981-8789

Environmental Products Guide

The U.S. General Services Administration updates its guide containing descriptions and recycled content percentages for hundreds of products available in the GSA/FSS supply system. Vendors are not listed. For more information, contact 817/334-5215.

U. S. Conference of Mayors

Information is provided through the “Buy Recycled” Campaign on sample ordinances, case studies, and procurement and bidding specifications at both the state and local levels. For more information contact 202/293-7330.

Other Resources:

Resource Guide to Business Products
Manufacturers’ Recycling Products and Programs
The Business Products industry Association
301 North Fairfax Street
Alexandria, VA 22314-2696
Contact: 703/549-9040
800/542-6672

Waste Reduction Tips
11906 Paradise Lane
Herndon, VA 22071-1519

Construction

The Sourcebook for Sustainable Design

This publication contains listings of more than 100 recycled products used in construction applications. The cost is \$25 plus shipping. For more information, contact the Boston Society of Architects at 617/951-1433.

The Green Pages: The Contract Interior Designers’ Guide to Environmentally Responsible Products and Materials

This guide contains product listings of more than 320 environmentally responsible building material manufacturers. Price \$35. For more information contact Andrew Fuston at 212/779-3365.

Building Guide

The Center for Resourceful Building Technology published the *Guide to Resource Efficient Building Elements*, including recycled products made by more than 400 manufacturers. For more information, contact the Center for Resourceful Building Technology at 406/549-7678.

Construction Products Conference

Recycled materials for construction projects are detailed in audio tapes from the Los Angeles Integrated Solid Waste Management Office. Los Angeles held a Recycled Construction Products Conference, where 17 speakers discussed residential demonstration projects and construction cost savings. Two tapes of the proceedings are available for \$25. ISWMO also publishes a *Resource Guide to Recycled Content Construction Products*, which includes product guides available. Call Kelly Ingalls at 213/237-1444.

National Parks Service

The National Park Service Sustainable Designs and Construction Database has information about an estimated 1000 products. The products are rated on 14 environmental factors and can be searched by manufacturing plant location, CSI division, or product type. The database also includes information about construction side recycling. The cost is \$7. For more information, contact Jody Morrison at 303/969-2132.

Other Resources:

Cellulose Insulation Manufacturers’ Association
136 S. Keowee Street
Dayton, OH 43402
937/222-2462.

N. American Insulation Manufacturers Association
44 Canal Center Plaza, Suite 310
Alexandria, VA 22314
703/684-0084

Materials And Trade Associations

Paper Directory

The American Forest & Paper Association publishes *PaperMatcher*, a directory containing hundreds of recovered paper dealers throughout the U. S. sorted by state. It also has listings for paper and paperboard mills using recovered

paper. Single copies are available for free. For more information, contact 202/463-2700.

Paper Standards

The National Recycling Coalition's Recycling Advisory Committee (RAC) has compiled the final report on recycled paper definitions, procurement standards, measurement protocol, labeling guidelines, and buy recycled initiatives recommending standards and definitions for government purchasing of recycled paper products. For more information, call the NRC office at 703/683-9025.

Recycled Rubber Products Catalog

This free catalog contains approximately 100 listings of companies making products from scrap tires. For more information, contact the Scrap Tire Management Council at 202/682-4880.

Directory of Companies Manufacturing Products from Recycled Vinyl

This directory lists more than 60 companies manufacturing products from recycled vinyl. For more information, contact the Vinyl Institute at 800/969-8469.

Plastic Products

The American Plastic Council (AK) has published a *Recycled Plastic Source Book* to help private and public sector buyers identify products made with recycled plastic. The book lists manufacturers, describes their products, and includes content information. The manufacturers listed in the publication were collected from a survey conducted by AK. For information about the source book or to fill out a survey, call the Council at 800/2HELP90:

Additional Plastic Recycled Products

Purchase of Recycled Plastic Products, a report released by Maryland's Department of the Environment, describes Maryland's purchase of products made from recycled plastic and lists opportunities for increasing the use of recycled plastic products in the state government. For more information, contact the Maryland Office of Recycling at 410/631-3315.

Beyond Bags

The Buy Recycled Business Alliance and the Food Marketing Institute have published *Beyond Bags*, an industry specific buying recycled guide for the grocery industry. Designed by business for business, this guide is packed with innovative ideas and examples of successful practices. Beyond Bags is available free to BRBA members and at a cost of \$25 to nonmembers. For more information, call NRC at 708/683-9025.

Environmental Packaging Guide

Environmental Packaging US. Guide to Green Labeling, Packaging, and Recycling, a manual published by the Thompson Publishing Group, contains chapters and regulations, other legal issues, international regulations, industry standards, information resources and contacts, and specific paper and plastic regulations. The report costs \$398 per year, which includes monthly updates and an 8-page monthly newsletter, focusing on case studies of successful pollution prevention/recycling efforts and a monthly round-up of state recycling and packaging legislation. For more information, contact Felicia Day at 202/739-9553.

Office Products

National Office Products Association offers a *Resource Guide to Office Product Manufacturers*. Some manufacturers provide information about postconsumer recycled content. For more information, contact 703/549-9040. Contact: Fay Peterson

Corrugated Packaging Recycling Hotline

The Corrugated Packaging Council has set up a 24 hour Hotline to provide information to recycling coordinators and retailers about corrugated recycling operations. Consumers can call for brochures and fact sheets about recycling, facilities, and end-markets for corrugated packaging. The Hotline number is 800/879-9777.